SUPREME COURT, U. S.

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IN THE

Supreme Court of the United States

OCTOBER TERM, 1971

No. 71- 503

RICHARD T. WHITCOMB, *Petitioner,*

v.

GENERAL DYNAMICS CORPORATION AND AMERICAN AIRLINES, INC., *Respondents.*

PETITION FOR WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FOURTH CIRCUIT

CARL G. LOVE
WILLIAM K. WEST, JR.
DONALD J. BIRD
CUSHMAN, DARBY & CUSHMAN
Washington, D. C.
Attorneys for Appellee, Richard T. Whitcomb

EDWARD L. BREEDEN, III
BREEDEN, HOWARD & MACMILLAN
Norfolk, Virginia
Of Counsel

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GENERAL DYNAMICS CORPORATION AND AMERICAN AIRLINES, INC., *Respondents.*

PETITION FOR WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FOURTH CIRCUIT

Petitioner, Richard T. Whitcomb, plaintiff patentee and appellee below, prays that a Writ of Certiorari issue to review the judgment of the Court of Appeals for the Fourth Circuit, entered June 15, 1971, in the above-entitled case, adjudging that Petitioner's U. S. patent No. 2,967,030 issued January 3, 1961, was not infringed by the manufacture, use and sale of Respondents' Convair 990 commercial transport airplanes.

CITATIONS TO OPINIONS BELOW

The opinion of the Court of Appeals is reported at 170 U.S.P.Q. 242, and is reprinted in the Appendix hereto at pages A.26 to A.31*. Its unreported decision on Petition for Rehearing is presented at page A.32.

The Findings of Fact and Conclusions of Law of the District Court are reported at 164 U.S.P.Q. 610, and reprinted herein at pages A.1 to A.23, the unreported Order of that Court being reprinted at pages A.24-A.25.

JURISDICTION

The judgment of the Court of Appeals was entered on June 15, 1971 (A.26), and its order denying rehearing was entered July 14, 1971 (A.32), this Court's jurisdiction is invoked pursuant to 28 U.S.C. § 1254(1).

QUESTIONS PRESENTED

QUESTION NO. 1

Whether in reversing the District Court under the law of the "Doctrine of Equivalents", the Court of Appeals erred in reasoning that an accused device which allegedly includes a variation from the patented structure avoids infringement of a valid patent if the variation is thought to add to the effectiveness of the device, even though the allegedly modified accused structure simply follows the same inventive principles taught in the patent itself, and continues to perform the same function, in the same manner, for the same purpose, to achieve the same wholly novel result of the patent.

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* Page numbers preceded by capital letter "A." refer to the pages of the Appendix to this Petition for Certiorari. Page numbers preceded by Capital letter "R." refer to pages in the printed Appendix before the Fourth Circuit Court of Appeals. The symbol "FOF" refers to Findings of Fact, below. Petitioner Whitcomb trial exhibits are designated "W-", and Respondents' trial exhibits are designated "GD-". Emphasis in quotations is added throughout.

QUESTION NO. 2

Whether the Court of Appeals erred in departing from the basis this Court has directed for the determination of patent infringement, i.e. by a comparison of the accused device with the patent claims and specification, as construed in light of the prior art—and instead basing its determination of non-infringement solely upon a comparison of the accused device with certain of the inventor's research investigations, extraneous to the patent documents themselves.

Substantially, the same issue as is presented by these Questions, the legal tests for the determination of infringement of a valid patent, was recognized by this Court to be of substantial importance, when it granted certiorari in *Standard Industries, Inc.* v. *Tigrett Industries, Inc.*, No. 445, October 27, 1969, 396 U.S. 885. The importance of, and widespread interest in, these issues is underscored by the fact that both the Department of Justice and the American Patent Law Association requested, and were granted, leave to file, and did file, briefs amicus curiae in *Standard Industries, supra.* However, that case was then affirmed by an equally divided court, without opinion, 397 U.S. 586 (1970).

It has now been 21 years since this Court last rendered an opinion on these issues, by Mr. Justice Jackson in *Graver Tank & Mfg. Co.* v. *Linde Air Products Co.*, 335 U.S. 605, (1950) (which opinion was prior to the enactment of the presently controlling statute, 35 U.S.C. 271).

In the twenty-one (21) years since *Graver Tank, supra,* this Court has considered questions of "contributory infringement" (*Aro*),[1] standards of patent-

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[1] *Aro Mfg. Co.* v. *Convertible Top Replacement Co.*, (I) 365 U.S. 336, 5 L.ed 2d 592 (1961); (II) 377 U.S. 476, 12 L.ed 2d 457 (1964).

ability and obviousness" (*Graham*,[2] *Adams*,[3] *Anderson's Black Rock*),[4] "license estoppel" (*Lear*),[5] "collateral estoppel" (*Blonder-Tongue*),[6] and antitrust issues based on "fraud" in the procurement of a patent (*Walker Process*),[7] and on "misuse" of issued patents (*Zenith Radio*).[8] Thus, beginning about 1961, this Court has addressed itself to and rendered significant opinions on most of the important questions and issues in the patent law—*except for* the substantive interpretation of what constitutes infringement of a valid patent.

The absence since *Graver Tank* of more recent guidance by this Court on this issue has led, predictably, to the occurrence of confusion and conflict between the Circuits as to the proper construction and interpretation of patents in determining the existence of infringement, and particularly with respect to the Doctrine of Equivalents.

STATUTORY PROVISIONS INVOLVED

UNITED STATES CODE, Title 35:

112 The specification shall contain a written description of the invention, and of the manner and process of

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[2] *Graham* v. *John Deere Co.*, 383 U.S. 1, 15 L.ed 2d 545 (1966).

[3] *United States* v. *Adams*, 383 U.S. 39, 15 L.ed 2d 572 (1966).

[4] *Anderson's Black-Rock* v. *Pavement Salvage Co.*, 396 U.S. 57, 24 L.ed 2d 258 (1969).

[5] *Lear* v. *Adkins*, 295 U.S. 653, 23 L.ed 2d 610 (1969).

[6] *Blonder-Tongue Laboratories* v. *University of Illinois Foundation*, — U.S. —, 28 L.ed 788 (1971).

[7] *Walker Process Equipment Co.* v. *Food Mach. Corp.*, 382 U.S. 172, 15 L.ed 2d 247 (1965).

[8] *Zenith Radio Corp.* v. *Hazeltine Research, Inc.*, 395 U.S. 100, 23 L.ed 2d 129 (1969).

making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention. A claim may be written in independent or dependent form, and if in dependent form, it shall be construed to include all the limitations of the claim incorporated by reference into the dependent claim.

* * * * *

271 Infringement of patent

(a) Except as otherwise provided in this title, whoever without authority makes, uses or sells any patented invention within the United States during the term of the patent therefor, infringes the patent.

281 Remedy for infringement of patent

A patentee shall have remedy by civil action for infringement of his patent.

STATEMENT OF THE CASE

The present case commenced as an action for infringement of Petitioner's U.S. patent No. 2,967,030 against Respondent, American Airlines, Inc. Subsequently, Respondent General Dynamics, brought a declaratory judgment action against Petitioner Whitcomb. The two cases were consolidated, and the parties aligned with Petitioner as plaintiff and the Respondents as co-defendants. (A. 2)

Petitioner, Dr. Richard T. Whitcomb is one of America's most valued and honored aerodynamicists, whose

earlier invention of the "Area Rule" is now the fundamental basis for the design of all supersonic aircraft.[9] More recently, he is the inventor of the "supercritical wing" which has been heralded as revolutionizing all future airplane wing design.[10] The invention of the patent in suit similarly received substantial publicity.[11]

Dr. Whitcomb holds absolute title to the patent in suit, by determination of the Government Patents Board, acting under Executive Order 10096, his rights being subject only to his previous voluntary grant of a royalty-free irrevocable, non-exclusive license to the United States for all governmental purposes.[12]

The patent in suit is for an invention which Respondent's own experts acknowledge to be "an important milestone", and the "breakthrough" they had been seeking "in aerodynamic theory" (FOF 18, A. 90), in the design and development of Respondents' accused airplane.[13]

In brief, the invention provides entirely novel aerodynamic antishock bodies, which are "special elongate bodies" added on the upper surface of an airplane wing (FOF 7, A. 5), to enable subsonic transport aircraft to "fly faster before the speed-inhibiting drag rise phenomenon occurs". (FOF 9, A. 6). This "drag rise is [otherwise] virtually a speed barrier through

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[9] See W-1, R. 985a-991a.

[10] New York Times, February 9, 1969, Front Page; Time Magazine, February 21, 1966, page 66 "Science".

[11] See W-13, R. 1010a and W-105, R. 1227a-1230a, FOF 15, A. 8.

[12] See GD-8 and GD-9, at R. 778a-780a, FOF 14, A. 7.

[13] Respondents admittedly derived their knowledge of the invention entirely from Petitioner Whitcomb and publications describing specific embodiments of his invention, (FOF 15-23, pages A. 8 to A. 11).

which the airplane may not pass". (FOF 4, A. 4). *Never before* had the result of Petitioner's invention been achieved. Previously, "it was well accepted among aerodynamicists that the addition of structure to an aircraft would result in an *increase* in the *drag* of the airplane in subsonic flight," (FOF 5, A. 4). By contrast, the Whitcomb bodies had the opposite effect of delaying the drag rise and thus *increasing the speed* of the airplane. (Court of Appeals, A. 28).

Respondents' own technical documents (W-49, R. 1068a) showed that the use of Dr. Whitcomb's invention was "the only way" to achieve the valuable speed increase they needed for this airplane (FOF 24-30, A. 11 to A. 13). As the District Court put it in a finding unchallenged by the Respondents or the Court below, this pioneering invention of Whitcomb's patent was, at the high subsonic speeds contemplated, so radical as to constitute "*a contradiction* to the absolutes of [aerodynamic] theory," (FOF 5, A. 4).[14]

After an eight day trial, and hearing testimony from eight "live" witnesses and receiving over two hundred and ten exhibits, as well as depositions and affidavits, the District Court below ruled in Petitioner's favor as to all defenses,[15] and found there was literal in-

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[14] Not unlike the nature of the invention and patent involved in *United States* v. *Adams*, 383 U.S. 39 (1966).

[15] The District Court upheld the validity of the patent, generally observing that Respondents' extensive prior art defenses (see A. 14) were completely unrelated to the invention of the patent in suit (see FOF 36-53, A. 15 to A. 21). Other rejected defenses included (i) General Dynamics' vigorous contention that they operated under the patent with an implied license (based on their admitted derivation of the invention from Whitcomb), as well as (ii) their accusation Dr. Whitcomb had retained title to his patent by fraudulent conspiracy with high government officials.

fringement of the claims in suit, specifically stating further, in a subsequent ruling written shortly after the decision, that infringement of the patent was "undoubtedly" present.

The Fourth Circuit Court of Appeals reversed, but *solely* on the issue of infringement (not reaching the other issues). The Fourth Circuit not only reversed the finding of undoubted *literal* infringement by the District Court, but went on to hold that infringement under the "Doctrine of Equivalents" was also avoided.

The Court's reasoning was that Respondents had altered one of the several specified positions of the patented structure and that this change did "add" to the effectiveness of the device. Accordingly, because the accused device allegedly had an "improved" performance over the form of the invention as shown in the patent, the Court held it was not an *equivalent* —even though there was otherwise no change in the form, shape, position, purpose, function, mode of operation or result of Respondent's structure as compared to that of the patent.[16]

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[16] The Court of Appeals itself recognized, and did not question, the effectiveness of Petitioner's antishock bodies, observing, "It was Whitcomb's theory that such bodies, by decelerating the airflow over the wing, would enable a plane to reach higher speeds before experiencing drag rise. Subsequent wind tunnel tests confirmed that the antishock bodies smooth the flow of boundary layer air at transonic speeds, and that a wing without antishock bodies experiences drag rise at a lower speed than the same wing with the bodies added. On January 3, 1961, U.S. Letters Patent No. 2,967,030 were issued to Whitcomb for his invention." (A. 28)

The Court of Appeals also recognized and stated that "Each General Dynamics Convair 990 employs 4 wing bodies *very similar to Whitcomb's*," and it was never really challenged that Respondents used their bodies for the purpose of performing the same function to achieve the same result in the same way as Whitcomb described in his patent.

This case thus presents to this Court, in a clear-cut factual setting, the most important question of what are the proper legal tests for the substantive determination of what constitutes infringement of a valid U.S. patent.

The Court is also presented with an opportunity for unraveling the conflict which now exists between the circuits, and for restating its views as to the proper substantive legal tests for determining the answer to the question of whether an accused device infringes a valid U.S. patent.

REASONS FOR GRANTING THE WRIT IN THIS CASE

PRIOR DECISIONS BY THIS COURT UNIFORMLY ADHERE TO LONG-STANDING PRINCIPLES OF EQUIVALENCY DISREGARDED BY THE COURT OF APPEALS BELOW

As noted above, *Graver Tank & Mfg. Co.* v. *Linde Air Products, Co., supra,* is the most recent opinion by this Court on the "Doctrine of Equivalents" and the applicable law of infringement. In *Graver Tank* (opinion by Mr. Justice Jackson), this Court stated, inter alia:

> But courts have also recognized that to permit imitation of a patented invention which does not copy every literal detail would be to convert the protection of the patent grant into a hollow and useless thing. Such a limitation would leave room for—indeed encourage—the unscrupulous copyist to make unimportant and insubstantial changes and substitutions in the patent which, though adding nothing, would be enough to take the copied matter outside the claim, and hence outside the reach of law. One who seeks to pirate an invention, like one who seeks to pirate a copyrighted book or play, may be expected to introduce minor variations to conceal and shelter the piracy. Outright and forthright duplication is a

dull and very rare type of infringement. To prohibit no other would place the inventor at the mercy of verbalism and would be subordinating substance to form. It would deprive him of the benefit of his invention and would foster concealment rather than disclosure of inventions, which is one of the primary purposes of the patent system.

The doctrine of equivalents evolved in response to this experience. The essence of the doctrine is that one may not practice a fraud on a patent. Originating almost a century ago in the case of Winans v. Denmead (US) 15 How 330, 14 L ed 717, it has been consistently applied by this Court and the lower federal courts, and continues today ready and available for utilization when the proper circumstances for its application arise. "To temper unsparing logic and prevent an infringer from stealing the benefit of the invention" a patentee may invoke this doctrine to proceed against the producer of a device "if it performs substantially the same function in substantially the same way to obtain the same result." Sanitary Refrigerator Co. v. Winters, 280 US 30, 42, 74 L ed 147, 156, 50 S Ct 9. The theory on which it is founded is that "if two devices do the same work in substantially the same way, and accomplish substantially the same result, they are the same, even though they differ in name, form, or shape." Union Paper-Bag Machine Co. v. Murphy, 97 US 120, 125, 24 L ed 935, 936.

A span of, again, twenty-one years had occurred between *Graver Tank* and the two earlier leading cases by this Court on the question of interpretation of patents under the "Doctrine of Equivalents". Those cases were: *Temco Electric Motor Co.* v. *Apco Mfg. Co.,* 275 U.S. 331 (1928), and *Sanitary Refrigerator Company* v. *Alexander F. Winters,* 280 U.S. 30 (1929).

In both, the issue of infringement under the "Doctrine of Equivalents" was considered, infringement was found, and definitive expositions of this doctrine were announced:

In *Temco, supra,* this Court held:

> "* * * * * It is well established that an improver can not appropriate the basic patent of another and that *the improver without a license is an infringer* and may be sued as such. Cochrane v. Deener, 94 U.S. 780, 787, 24 L. ed. 139, 141; Cantrell v. Wallick, 117, U.S. 689, 694, 29 L. ed. 1017, 1918, 6 Sup. Ct. Rep. 970; Yancey v. Enright, 145 C.C.A. 51, 230 Fed. 641, 647; Reed v. Hughes Tool Co. (C.C.A. 5th) 261 Fed. 192, 194."

> "* * * * * We must consider that the [defendant's structure] was really an appropriation of the original design of the Thompson patent, *whether it be,* as we think it was, a patentable improvement thereon, or the mere equivalent of the casing and hanger." (275 U.S. at 328)

And, in *Sanitary Refrigerator, supra,* this Court stated:

> "* * * * * A close copy which seeks to use the substance of the invention and, *although showing some change in form and position,* uses substantially the same devices, performing precisely the same offices with no change in principle, *constitutes an infringement.* Ives v. Hamilton, 92 U.S. 426, 430, 23 L. ed. 494, 495." (280 U.S. at 42) (Emphasis Added)

Each of these cases clearly indicates that *whether or not* an infringer changes the "form or position" of a patented structure, and thereby makes some "improvement" thereon, so long as his acts constitute

an appropriation of the basic patented idea and his device continues to perform "precisely the same offices with no change in principle" (280 U.S. at 42, *supra*) —*he has infringed the patent.*

The present ruling by the Fourth Circuit is in *direct conflict* with and contrary to each of these foregoing decisions by this Court—both in logic and result. Moreover, the reasoning and result of the Fourth Circuit is in direct conflict with recent decisions of *at least six other Circuits,* as well as the Court of Claims—

THE DECISION BY THE FOURTH CIRCUIT BELOW IS IN DIRECT CONFLICT WITH THE DECISIONS OF AT LEAST SIX OTHER CIRCUITS, ALL OF WHICH FOLLOW THE OPINIONS OF THE SUPREME COURT

The Fourth Circuit's decision in this case is also in *clear and direct conflict* with the rulings and opinions rendered in *at least six* other Circuits, as well as in the Court of Claims.

Cases from the *Second, Third, Fifth, Seventh, Ninth and Tenth* Circuits *all* show that in those circuits it has been recognized that an accused infringer *cannot* avoid liability under 35 U.S.C. 271 merely because he introduces some variation in the precise form of the patented item which may "add to the effectiveness of the device" but, which otherwise in no way alters or departs from the purpose, function and result of the otherwise completely copied patented structure. *In general,* these other Circuits have held that even if such a modification of the patented structure constitutes an "improvement" to the exact form of the device shown in the patent this *"is irrelevant to the question of infringement".*

Such was the view of the **Second Circuit,** as it was stated in *American Safety Table* v. *Schreiber,* 269 F. 2d 255 (2 Cir. 1959), *cert. denied* 361 U.S. 915:

> ". . . if [defendant's device] be deemed an improvement, *it is irrelevant* to the question of infringement." (269 F. 2d at 264)

The **Second Circuit** expressly pointed out in a later decision, *International Latex Corp.* v. *Warner Bros. Co.,* 276 F.2d 557 (2 Cir. 1960), *cert. denied* 364 U.S. 816, that findings of non-infringement should not be based on the *"unreal"* issue of whether the accused structure was an improvement over the patented structure:

> " * * * neither the superiority of [defendant's modification] nor its being more expensive, in an unstated degree, would require a determination that it passed the bounds of equivalence in a proper case . . . *that issue is an unreal one* arising out of the attempted dichotomy of "equivalancy" as between fact and law." (276 F.2d at 563)

Using the same reasoning, the **Third Circuit** Court of Appeals has likewise pointed out that findings of non-infringement are not to be based on the notion that because defendant may have "improved" the patented structure infringement of the patent is thereby avoided, e.g. *Q-Tips, Inc.* v. *Johnson & Johnson,* 207 F.2d 509 (3 Cir. 1953), *cert. denied* 347 U.S. 935:

> " . . . to the extent it was *only* an improvement, the District Court could *not* have concluded against infringement." (207 F.2d at 511)

The **Fifth Circuit** has similarly repeatedly recognized that infringement based upon a theory of equivalency is to be upheld even though the accused device in fact

functioned more effectively than the patented structure. This was expressly so held in *E-I-M Co.* v. *Philadelphia Gear Works,* 223 F.2d 36 (5 Cir. 1955), *cert. denied* 350 U.S. 933, even where there was—

> " . . . convincing testimony . . . based upon actual tests, that the [accused] device actually functions more effectively [than the device under the patent]." (223 F.2d at 40)[17]

The **Fifth Circuit** made the same point again in *Up-Right, Inc.* v. *Safway Products, Inc.,* 315 F.2d 23 (5 Cir. 1965), *cert. denied* 375 U.S. 831, where infringement of the patent based upon "equivalency" was upheld even though—

> " . . . the accused device was simpler, safer and *more efficient* in operation, and also that it was substantially and materially different in structure, mode of operation, and result from the device of the patent.
>
> * * * * *
>
> " . . . we adhere to the established rule that the patent was *not limited to the preferred embodiments* shown in the claims or drawings.
>
> * * * * *
>
> "The law is that *substance is not to be subordinated to form so as to deprive one of the benefit of his invention.* And it is settled that if the accused device performs substantially the same function in substantially the same way to obtain substantially the same result, *it infringes.*" (215 F.2d at 26, 27)

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[17] It should be noted here that in the present case no such "convincing testimony" or "actual tests" are present. The "comparison" the Court of Appeals relied upon was between two forms of the patentee's structures, one of which was "slightly superior" to the other. Respondent's structure corresponds to neither of these, but most closely resembles the structure of the drawing of the patent.

Even more recently, the **Fifth Circuit** again similarly upheld infringement in *Williams Bit & Tool Co.* v. *Christensen Diamond Products,* 399 F.2d 628 (5 Cir. 1968), pointing out that while defendant's device—

> " . . . may well be an improvement . . . *it is not a departure from the patent principle.* Likewise, we regard the other features of the accused [device] . . . as, at the most, improvements of the structure rather than departures from it. As such they do not avoid infringement of the patent." (399 F.2d at 635)

The **Seventh Circuit** is also in accord with these decisions, as can be seen from *Borg-Warner Corporation* v. *Mall Tool Co.,* 217 F.2d 850 (7 Cir. 1954), *cert. denied* 349 U.S. 946, wherein infringement was upheld even though the defendant's device varied from and was an improvement over the teaching of the patentee's.

> "From an examination of the evidence and the Court's finding, it seems clear that defendant's variation from [patentee's] teaching in this respect represents merely the improvement of a skilled mechanic, *while still adopting the exact teaching of* [*patentee*]." (217 F.2d at 852)

The **Ninth Circuit** has also similarly ruled, as in *Hansen* v. *Colliver,* 282 F.2d 66 (9 Cir. 1960) wherein infringement was again upheld even though the accused device was an improvement over the patented structure, the Court stating:

> "It may be, as indicated by the trial court, that appellees' device is superior in its simplicity in the use of a table top instead of a guide. *If the table top is an improvement it is nevertheless the equivalent of the guide and is merely a change in form."* (282 F.2d at 69)

A year after the Hansen case, the **Ninth Circuit** reemphasized this same approach and understanding of the law in *Neff Instrument* v. *Cohu Electronics,* 298 F.2d 82 (9 Cir. 1961), pointing out:

> "At best, then, it appears that the accused amplifier is *an improvement* over the plaintiff's amplifier. And it is well established that *an improver cannot appropriate the basic patent of another,* and that the improver without a license is an infringer, and may be sued as such.
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> * * * * *
>
> And defendant's own advertising . . . evidences the fact that its amplifier performs the same functions (but better) that the plaintiff's amplifier performs. 'Whether the two devices are identical in this respect [the design of an element] is *not relevant* for they are identical functionally." (298 F.2d at 89, 90)

Such also is the interpretation of the law of the Doctrine of Equivalents by the **Tenth Circuit** as can be seen from, for instance, *McCullough Tool* v. *Well Surveys, Inc.,* 343 F.2d 381 (10 Cir. 1965) *cert. denied* 383 U.S. 933, 385 U.S. 990, 384 U.S. 947, 385 U.S. 995, which succinctly states:

> " . . . infringement *cannot be avoided* by the mere fact that the accused device is more or less efficient or performs additional functions." (343 F.2d at 402)

Only last year the **Court of Claims** followed the same reasoning of the above Circuits and upheld infringement, under the "Doctrine of Equivalents", in *Palmer* v. *United States,* 423 F.2d 316 (Ct. Cls. 1970) *cert. denied* 400 U.S. 951, even though the accused devices were acknowledged to be improvements:

> "While no doubt the accused structure is *a practical improvement* over the embodiment shown

in the patent, its *means, function and result are essentially the same.*" (423 F.2d at 323)

Each of the eleven (11) cases just cited, variously from the Second, Third, Fifth, Seventh, Ninth and Tenth Circuits, and the Court of Claims, relied on the views expressed by this Court in *Graver Tank, supra,* as the basis for their reasoning. Many of them also cited and rely on *Sanitary Refrigerator, supra,* and *Temco, supra.* Each clearly holds that it is improper as a matter of law, to conclude non-infringement simply on the basis that,

(a) the accused device has some variation from the patented structure, which variation,

(b) contributes some improvement or adds to the effectiveness of the structure devised by the patentee, where,

(c) the accused device performs the same function, by the same means for the same purpose as taught by the patent.

Each of these eleven (11) cases recognizes that when the accused device simply follows the teaching of the patent and incorporates the same means, function and result of the patented device, it is *at least* an infringement of that patent under the "Doctrine of Equivalents". This result is reached whether the patent involved was of the nature of a pioneering invention, or involved only a "narrow" contribution to the art.[18]

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[18] Of course, nearly all cases recognize that a patent for a "pioneering" invention such as is petitioner Whitcomb's patent in this case (see page 7, *supra*), is entitled to a broader range of "equivalents" than are patents for narrower inventive contributions.

Such has been the law consistently pointed out by this Court, as the Sixth Circuit observed in *Aluminum Company of America* v. *Sperry Products, Inc.*, 285 F.2d 911 (6 Cir. 1960)—

> An infringement said the court in Westinghouse v. Boyden Power Brake Co., 170 U.S. 537, 569, 18 S.Ct. 707, 723, 42 L.Ed. 1136, quoting from Burr v. Duryee, 1 Wall. 531, 573, 17 L.Ed. 660, "is a copy of the thing described in the specification of the patentee, either without variation, or with such variations as are consistent with its being in substance the same thing. If the invention of the patentee be a machine, it will be infringed by a machine which incorporates in its structure and operation the substance of the invention; that is, by an arrangement of mechanism which performs the same service or produces the same effect in the same way, or substantially the same way. (285 F.2d at 923)

The opinion and decision by the Fourth Circuit Court of Appeals in the present case is in *direct conflict* with each of the above decisions from at least six (6) other circuits, as well as the Court of Claims. It is also in direct conflict with the decisions by this Court in the *Graver Tank, Temco* and *Sanitary Refrigerator,* all cited, *supra.*

Even if it is assumed that the accused antishock bodies used by the Respondents on the General Dynamics' Convair 990 airplanes, *are* an "improvement" over the precise structure shown in Petitioner's patent drawings—it remains that the accused antishock bodies are not only admittedly "very similar" to the bodies of Dr. Whitcomb's patent, but unquestionably also that their "means, function and results are essentially the same."

The similarity of the accused bodies to the patented bodies can be readily seen from the figures of the patent (page 33a) and from a re-produced picture of Respondent's Convair 990 airplane (page 38a).[19] The patent claim defines the form and shape of the bodies as having:

(1) an elongated body, with

(2) a forward region of progressively increasing cross-sectional area approximately the same as a cone, while

(3) the body then increases to a maximum cross-section; and thereafter,

(4) the body has a rear, tapered portion.

There is *no difference* between the "form and shape" of Respondent's accused antishock bodies and the teaching of the patent, and *none* was pointed out by the Court below. The accused bodies *each* have the conical forward region, the maximum cross-section near the trailing edge of the wing, and a tapered rear portion extending aft of the trailing edge just like in the patent.

The patent also teaches a placement of the antishock bodies on the airplane wing such that they are,

(1) on the upper surface of the wing; with

(2) the conical "forward region" extending "just forward" of the region of maximum thickness of the wing; while,

(3) the maximum cross-section of the bodies lies "near the wing panel trailing edge"; and,

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[19] While the patent drawing shows 4 bodies on each wing, and the 990 airplane has two, the patent's disclosure and its claims teach the possible use of only one such body. The issue of non-infringement does *not* depend on the ***number*** of bodies on the airplane.

(4) the rear tapered portion of the body extends aft of the trailing edge of the wing.

Respondent's bodies admittedly comply fully with three of these four specifications, viz Nos. 1, 3 and 4.

The infringement issue thus turns solely on the alleged change of a single position of Respondent's bodies (the second criterion above), and the question of whether the accused structure with that single variation remained at least an "equivalent" of the patented device.

There is no prior art, or Patent Office history, which requires any restriction of the scope of the patent to uphold its validity, and none was cited by either court below—but, in nonetheless placing an improper narrow construction on the claims, the Fourth Circuit Court of Appeals below fell into further conflicts and errors of law, as follows:

THE DECISION OF THE FOURTH CIRCUIT IS IN FURTHER CONFLICT WITH DECISIONS OF THIS COURT AND OTHER CIRCUITS IN DEPARTING FROM THE PRINCIPLES THAT A PATENT CLAIM IS TO BE READ WITH ITS SPECIFICATION, AND INFRINGEMENT DETERMINED BY THEM COMPARING THE ACCUSED DEVICE WITH THE CLAIM AS THUS CONSTRUED

The failure of the Court of Appeals to follow the principles of law laid down by this Court, and the other Circuits, is further dramatically revealed by the fact that its construction and interpretation of the claim of petitioner's patent in suit is so narrow *that the claim would not be infringed by even the specific embodiments disclosed in the patent itself.*

To reach this result, the Fourth Circuit again failed to heed, and placed itself in direct conflict with, the decisions of this Court and those of the other Circuits.

What the Fourth Circuit did was to construe the patent claim without reference to the patent specification itself, and then to determine non-infringement by a comparison of the accused device with the patentee's *initial* research investigation—while, again, ignoring the disclosures of the patent itself.

By contrast, this Court recently pointed out that,

> "it is fundamental that claims are to be construed in the light of the specifications and *both* are to be read with a view to ascertaining the invention."

United States v. *Adams,* 383 U.S. 39, at 49 (1966). The same point was earlier stated in *Graver Tank & Mfg. Co.,* supra:

> "What constitutes equivalency *must be determined against the context of the patent,* the prior art, and the particular circumstances of the case. Equivalence, in the patent law, is not the prisoner of a formula and is not an absolute to be considered in a vacuum. It does not require complete identity for every purpose and in every respect."
>
> (339 U.S. 605, at 609)

Indeed, prior to its decision below, the Fourth Circuit itself had similarly stated, *Marvel Specialty Co., Inc.* v. *Bell Hosiery Mills,* 330 F. 2d 164, (4 Cir. 1964):

> "Of course, equivalency in patent law cannot be determined in vacuo The question of infringement must be considered in the context of the prior art and with an eye to the contribution made by the patented invention."
>
> (330 F. 2d at 176)

The Second Circuit also pointed out in *Reiner* v. *I. Leon Co.,* 285 F. 2d 501 (2 Cir. 1960):

> *"A claim must of course read upon the specifications,* but the specifications, unless so declared,

> are *only an example of what the claim is intended to cover;* it is a species of a broader genus, else no claims would cover anything not literally described in the specifications."
>
> (285 F. 2d at 504)

Moreover, it is "axiomatic" in the patent law that infringement depends, not upon a comparison of the Defendant's accused product with the patentees' product, but upon a comparison of the accused device with the patent itself. *Walker on Patents,* Deller's Ed. (1937), § 450, p. 1681; *Magnavox Co.* v. *Hart & Keno,* 73 F. 2d 433, 455 (9th Cir. 1934). Obviously, a patentee's experimental or commercial devices may not correspond with the actual invention patented, and are thus well recognized as providing only a misleading basis for comparison.[20]

Departing completely from the principles of these decisions, what the Fourth Circuit did in this case was to refer to the Petitioner's earliest research investigations of his invention, and then limit the patent claim to the specific embodiment of Petitioner's initial experiment! It was from this analysis that the Court of Appeals derived its statement (A.31), that,

> ". . . the original Whitcomb bodies . . . extended forward only 4% of the distance from the region of maximum wing thickness to the wing's leading edge . . .".

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[20] See *American Technical Machinery Corp.* v. *Caparotta,* 339 F.2d 557 (2d Cir. 1964) cert. den. 382 U.S. 842; *Taylor-Reed Corp.* v. *Mennen Food Products,* 324 F.2d 108 (7th Cir. 1963); *Kromer* v. *Riegal Textile Corp.,* 227 F.2d 741 (7th Cir. 1955) cert. den. 350 U.S. 1007; *Keller* v. *Sprout, Waldron & Co., Inc.,* 129 U.S.P.Q. 465 (S.D.N.Y. 1961); *Church* v. *Kinkead Industries, Inc.,* 138 F.Supp. 954 (D.C. Ill. 1955), aff. 234 F.2d 573.

And, on this observation, the Fourth Circuit clearly based its view that it was

> "more reasonable to read claim 1 as describing a forward region that extends *to* just forward of wing panel region of maximum thickness and no farther". (A.30)

The Fourth Circuit then compounded its error by referring to a second, subsequent, research investigation by Dr. Whitcomb, where entirely different wing bodies were tested, which wing bodies happen to extend "64%" of that same distance.[21] Dr. Whitcomb had testified that these subsequent bodies were "*slightly* superior" to the "original bodies" of his first experiment.[22]

But, throughout its reasoning the Court of Appeals completely ignored the actual teaching and disclosure of Dr. Whitcomb's patent specification--which is not limited to the specific bodies of the original research investigation.

To the contrary, the unchallenged, incontrovertible evidence as to the illustrative embodiment of the patent drawing itself showed that in that example of the invention, *14 percent* of the total body length extended forward of the region of maximum thickness (R. 354a).

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[21] Its erroneous comparison, ignoring the teachings of the patent, also caused the Court to overlook the point that the "percentages" compared (i.e. relating to the distance between the leading edge and the maximum wing thickness) were *themselves not relevant* to the patent and *not* a limitation of any of its claims.

[22] It was from this that the Court of Appeals concluded that a "further forward" closed position was an "improvement" over the patent—ignoring here that the "improved" results were unrelated to the accused airplane, but rather a comparison between two embodiments of the invention of the patent itself.

The comparable figure for the accused Respondent's antishock bodies is an extension of *16 percent* of the total length of the body (R. 354a)—again established by unchallenged, incontrovertible evidence.

Thus, when the accused infringing device is compared *with only the illustrative example* of the patent drawings, there is at most a two percent difference in the forward extension of the body. Translated into actual dimensions on the airplane, this 2 percent difference *amounts to less than 6 inches*—again, an unchallenged, incontrovertible figure.

It will be observed, however, that the Court of Appeals gave greater emphasis to the "four feet forward" position of Respondent's wing bodies (A.30)—but in so doing the Court of Appeals wholly ignored the fact that the wing bodies disclosed and illustrated in the patent specification itself, and clearly covered by the "just forward" recitation in the patent claim, embodied *a comparable extension of over 40 inches forward* of the line of maximum thickness on the wing.[23]

There is seen from these incontrovertible figures the mischief which is wrought when the Fourth Circuit, in this case, departed from the principles of patent interpretation long laid down by this Court, and followed by the other Circuits. The result is a denial of the protection intended to be provided by the patent

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[23] The trial court, Judge MacKenzie, recognized that claim 1 of the patent specified that it was that *entire portion* of the body defined as the "forward region of a progressively increasing cross-sectional area approximately the same as that of a cone," which the claim places so as to be "extending just forward of the wing panel region of maximum thickness". Literal infringement was thus found by the trial court.

clause of the Constitution,[24] and the intent of Congress in enacting Title 35 United States Code. In this case, an individual inventor, title to his patent having been acknowledged by all proper authorities of the U. S. Government, has seen his invention admittedly pirated by a large, highly patent-conscious corporation; he has seen that invention used exactly in accordance with the teachings of his patent to the great value of that corporation[25]—and has now seen his right to recovery of damages, (as provided in 35 United States Code 284), denied by the Fourth Circuit Court of Appeals; which limited his inventive contribution solely to the scope of his original experiment—while ignoring the broader and more complete disclosure Dr. Whitcomb provided in his patent specification.

Had the specification of the patent in suit been confined to that original disclosure, there might be some rationale from which to say that the inventor's rights were limited to that single embodiment. But, there is no such rationale under the circumstances of this case where, under the classic "contract theory" of patent law, the inventor has clearly made a full and complete disclosure in his patent document—in return for which the law has provided that he is entitled to a commensurate scope of protection for his invention (except, always, to the extent the same might be limited by

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[24] Article I, Section 8: "The Congress shall have power . . . To promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries."

[25] Uncontroverted testimony, indeed admissions in open Court by American Airlines' Vice-President that American Airlines paid General Dynamics an additional sum of $400,000 per airplane for the added speed benefit contributed by the use of Dr. Whitcomb's invention (see FOF's 24, 25, 28-30, at A.11 to A.13), and would not otherwise have bought the airplanes.

prior art).[26] In a decision reported just this week, *Black, Sivalls & Bryson, Inc.* v. *National Tank Co.*, 171 U.S.P.Q. 17 (10 Cir. Aug. 9, 1971), the Tenth Circuit correctly states the accepted principle of law in these words:

> Equivalency must be determined against the context of the patent, the prior art and the particular circumstances of the case and complete identity for every purpose and in every respect is not required. Jones v. Bodaness, supra.
>
> *A primary or pioneer patent,* such as Bender, is to be given *a broad and liberal construction* and, also, a broad and *liberal range of equivalence* and it is *not to be limited to the precise device and instrumentality disclosed.* Mason Corporation v. Halliburton, 10 Cir., 118 F. 2d 729, 49 USPQ 7; Priebe & Sons Co. v. Hunt, 8 Cir., 188 F. 2d 880, 89 USPQ 299, cert. dismissed, 342 U.S. 801, 72 S.Ct. 92, 96 L.Ed. 607. A combination patent which constitutes a marked improvement in the

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[26] Note, here, that Dr. Whitcomb's patent was prepared and prosecuted by patent attorneys of the U.S. Government who had full access to Dr. Whitcomb's work and made full disclosure of his inventive embodiments. While it is true that subsequent to the filing of the patent Dr. Whitcomb conducted further investigations, including the "64 percent" wing bodies revealed to the Court of Appeals, the uncontroverted evidence shows that while those later bodies had certain purely *aerodynamic advantages,* principally resulting from the presence of additional "fillets" in their structure, those bodies were actually "impractical" because of interference by the "fillet" structure with other mechanical operations required on the airplane. The General Dynamics accused antishock bodies in suit *omit* any fillets" from their structure, and are unrelated to Dr. Whitcomb's subsequent research investigation. (R. 358a, 1295a)

art, such as Fearon, is entitled to a substantial range of equivalents.

(171 U.S.P.Q. at 19-20)

The decision of the Fourth Circuit in this case, construing Petitioner's patent so narrowly as not to be infringed by its own illustrative embodiments, is thus also in *direct conflict* with this above decision from the Tenth Circuit.

CONCLUSION

The opinion of the Fourth Circuit below relied on an extract from an 1877 opinion by this Court in *Machine Co.* v. *Murphy*, 97 U.S. 120, at 125 (See A.31) while ignoring that mere "form" is *not* "the essence of the invention" of Dr. Whitcomb's patent, and that, in any event, there was actually no difference in "form and shape", but at most only a slight change in one position of the accused structures. In *Machine Co.* itself, however, infringement, was found on much the same basis as was used in the District Court in this case, this Court then stating:

> *A primary or pioneer patent,* such as Bender, is of a thing, in the sense of the Patent Law, is the same as the thing itself; so that *if two devices do the same work in substantially the same way, and accomplish substantially the same result, they are the same, even though they differ in name, form or shape.*"
>
> (97 U.S. at 126)

Because of the great importance of the Questions presented herein, the widespread interest therein by others, to say nothing of the emasculation which has

been committed on a valid patent for a significant inventive contribution by a renowned scientist, we submit this Court should grant this petition for certiorari.

Respectfully submitted,

CARL G. LOVE
WILLIAM K. WEST, JR.
DONALD J. BIRD
CUSHMAN, DARBY & CUSHMAN
Washington, D. C.
Attorneys for Appellee,
Richard T. Whitcomb

EDWARD L. BREEDEN, III
BREEDEN, HOWARD & MACMILLAN
Norfolk, Virginia
Of Counsel

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